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Operational Excellence Strategy at DAF Trucks – Paccar

Strategic Management

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*Engaging in irregularities is severely sanctioned in correspondence with article 34 of
the Examination rules.*

We hereby declare that we have not engaged in any such irregularities.

Student(s)'s signature(s)

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Introduction

1. Introduction on DAF

DAF Trucks N.V. is a wholly owned subsidiary of the North-American corporation PACCAR Inc. DAF Trucks' core activities are focused on the development, production, marketing and sale of medium and heavy-duty commercial vehicles.¹

DAF's roots go back to 1928 when the Van Doorne brothers founded a machine workshop that manufactures trailers at first; in 1948 the name changed to "van Doorne's Automobielen Fabriek" and DAF starts manufacturing trucks as well as buses.

DAF also manufactured cars and military vehicles. One of the most prominent inventions of the van Doorne brothers was the Variomatic automatic transmission in the 1950's, an efficient automatic transmission adapted to smaller European engines. After some difficult periods in the 70's, the car division was transferred to Volvo.

In the 80's, DAF acquired the UK-based Leyland and thus DAF suddenly became a prominent player in the European market. However, due to a collapse in the truck market in 1993 (especially in the UK, on which DAF had now become highly dependent), DAF ran into financial trouble and was declared bankrupt.² A new company – DAF Trucks NV – was founded shortly after.

In 1996, Paccar takes over DAF thus definitely securing the continuation of the company. Paccar is one of the largest truck manufacturers in the world.

Today, DAF holds a strong third position in the European Union with a market share of 15,2%; In the Netherlands, Belgium, Great Britain, Czech Republic, Poland and Hungary, DAF is market leader.³

As stated above, DAF Trucks' core activities are focused on;

1. Development
2. Production
3. Marketing and sales

¹ Retrieved from www.daf.com on 15 May 2011

² Retrieved from www.daf.eu/NL/About-DAF/History/Pages/History-intro.aspx on May 21, 2011

³ Retrieved from www.truckinginfo.com/news/news-detail.asp?news_id=73143 on May 21, 2011

2. Assignment

The main purpose of an enterprise is to create value for the shareholders of the company. A strategy is used to achieve the objectives needed to be successful in the value creation. Depending on how the company address the (i) direction & goal setting, (ii) operational processes, (iii) support processes, (iv) evaluation & control processes and (v) organizational behaviour three main strategies can be used to differentiate with their competitors,

1. Customer intimacy,
2. Operational excellence,
3. Product leadership.

This paper will assess to which extent DAF Trucks is following an operational excellence strategy. The paper is split up in three parts,

1. Discussion on the methodology
2. Assessment of DAF's business model
3. Conclusion

3. Methodology

The *Operating Model of Operational Excellence* developed by xxxxx ⁴(input Kurt + referencing) is used to understand the strategy DAF is using to achieve their objectives.

In figure 1 an overview of the framework.

Operating Model of Operational Excellence

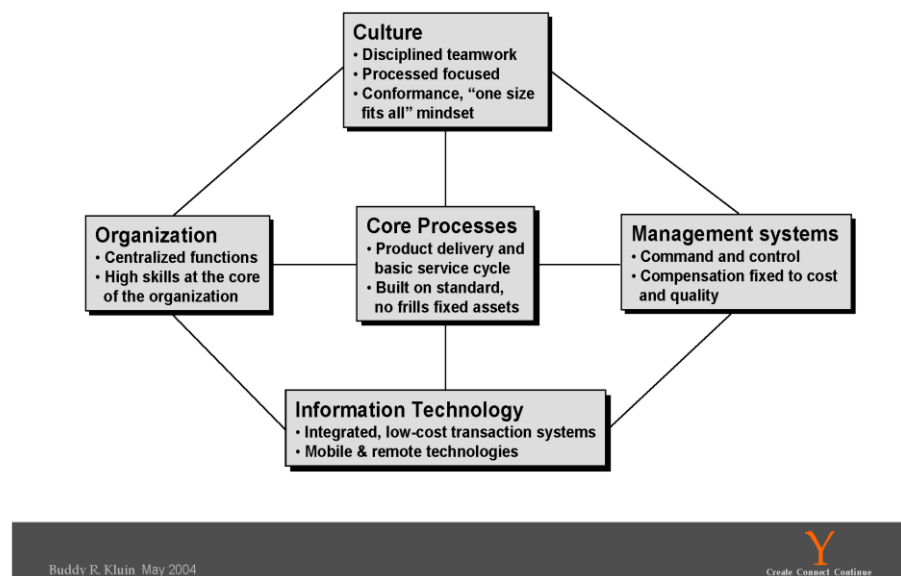


Figure 1: Operating Model of Operational Excellence developed by (XXX)

⁴ Nog aan te vullen door Kurt

Kurt, indien je hier nog extra input kan geven zou dit bruikbaar zijn

Assessment of DAF's business model

1. Description of the business model

In the following paragraphs, the DAF business model is described according to the key characteristics.

a. Culture (disciplined teamwork, process focused, conformance "one size fits all" mindset)

DAF works according to the 'Build to Order' principle. All vehicles are built to satisfy each customer's individual wishes, but production only starts after the order is received from the customer. This is very important because DAF builds tens of thousands of different vehicle versions which are all built to meet each customer's individual specifications and transport requirements. Customer focus is the top priority of DAF. Their goal is to supply world class products and services supported by their operations, processes and technology. They are investing in most modern manufacturing equipment to be able to achieve the highest quality and efficiency levels. Each department and employee of DAF is responsible for the quality it delivers and the experts on how to carry out their work even better and more efficiently. The *Paccar Production System*, very much inspired by the *Toyota Production System* – basically the inventor of lean manufacturing and Kaizen, aims at doing everything right first time with no unnecessary loss of energy or materials and with the highest conceivable quality.⁵ This is a clear indicator of a continuous improvement spirit that is institutionalized within the DAF organisation. In appendix, an example of a typical job offer at DAF can be found. In this case the vacancy concerns a process engineer; by reading the job offer, it becomes very clear that the process stands central and as an individual you have to contribute to the organization by optimizing and improving the processes, e.g. by working together in teams and giving support to other divisions. The job description is very clear and leaves not too much room for interpretation or a lot of freedom, e.g. you have to work "according to the DAF Production System" and you have to "take all facets of World Class Manufacturing into account". Efficiency is the driver of the entire DAF operations.

⁵ PROCESS PERFORMANCE verbeterpunten voor project portfolio - en projectmanagement, Matthias de Visser, Enschede, augustus 2007

Six Sigma was one of the concepts used at all the business activities of Paccar⁶, inclusive DAF, which lead to \$ 1.5 billion in cumulative savings and improved manufacturing efficiencies from 5 to 7 percent per year. Next to that Six Sigma also contributed toward improving logistics performance and the quality of components delivered by the company's suppliers.⁷

DAF is not only focusing on the production processes to improve their efficiency but is also focusing on other processes in the value chain f.e. supply chain and purchasing Hereafter an overview of some elements used by DAF to be efficient in all their business processes,

1. DAF has access to the technology and know-how of the suppliers of new products and systems,
2. The supplier should be reliable and flexible,
3. DAF is purchasing parts externally or internally if they can achieve a benefit compared with the competition
4. Production processes of the suppliers should be in compliance with the quality requirements of DAF,
5. Logistic requirements are part of the purchasing contract,
6. Performance of each suppliers is measured and discussed with the suppliers.⁸

Other actions that are supporting the efficiency improvements are,

1. Minimize working capital,
2. Minimize total amount of manipulations to produce a final product,
3. Integration of DAF and the suppliers,
4. Optimization of transport,
5. Standardization of parts.

Next to that, a lot of efforts are done to develop and implement efficient systems to support these processes. During the implementation of the above mentioned actions the

⁶ Paccar, retrieved from http://www.paccar.com/investors/annual_reports/Paccar-AR-2010.pdf, on May 19, 2011

⁷ QualityDigest, retrieved from <http://www.qualitydigest.com/inside/quality-insider-news/six-sigma-ceo-year.html>, on May 19, 2011

⁸ DAF, retrieved from <http://www.daf.com/NL/About-DAF/suppliers/Pages/Supply-management-vision.aspx>, on May 19, 2011

total cost is a critical item.⁹ So far, we can summarize the approach of DAF as efficiency focused to be able to address the requirements of the customers.

A lot of employees are trained on the Six Sigma concept. It is of course not only imported that the employees are trained and implement projects to increase the efficient but it is also important that they are involved in the battle plan of the company to understand where they are compared to their targets. *Key Performance Indicators* (referred to as KPIs) are used to track and to communicate the performance of the company to the employees. Hereafter an overview of some of the areas where indicators are used to track the performance of the implementation of the strategy of the company,

1. Health & safety,
2. Quality,
3. Productivity,
4. On-time performance,
5. Financial pleasures.

From the culture perspective you can say that DAF trucks is focusing a lot on optimization of processes to improve the efficiency and the involvement of people to align them on the strategy that should be implemented to be competitive in the market. They want to achieve the best total cost by using this strategy. Due to the focus on the processes they are also able to produce vehicles which are all built to meet each customer's individual specifications and transport requirements. Based on this analysis the conclusion is that DAF is focusing on disciplined teamwork and is process focused two elements aligned with the operational excellence strategy. They don't have the mindset "one size fits all" due to the fact that they produce different vehicle versions which are all built to meet each customer's individual specifications and transport requirements.

b. Core processes (product delivery and basic service cycle, built on standard, no frills fixed assets)

All of the work that needs to be done is described in norms as a standardized process. The entire focus is towards making the execution of this norm as hassle-free as possible. Control systems are set up to closely monitor efficiency and productivity in each step of the process. For each and every part of the truck, there is an exact norm defined to produce, transform and assemble these parts. Operators and the other people in the organisation have to ensure that this norm is being respected. These norms define the

⁹ DAF, retrieved from <http://www.daf.com/NL/About-DAF/suppliers/Pages/Logistics.aspx>, on May 19 2011

productivity of the production; processes are streamlined and are (as part of several on-going 6 sigma projects) continuously improved in order to further lower costs.

It is clear that DAF do a lot of effort to make them as efficient as possible. Because DAF Trucks is part of PACCAR, they do use several support processes of each other. Engines are produced by the PACCAR Columbus engine factory and used by DAF Trucks. In this way, all the support processes needed for the engines (like R&D, IT, etc.) is not needed in DAF Trucks. As other companies, also DAF outsources several things in the support processes, one example found is that (industrial) cleaning of the facilities is left over to the company Abilis.

DAF Trucks has the strongest dealer networks in the world, where they can sell, but also support their clients with for example spare parts. By being closer to the client, they can improve the support for the clients. A last example found to state that DAF Trucks works hard to improve its support processes is that they changed the internal logistics and created so called satellite stores, reduced the number of movements of parts, etc. to decrease the supply with 75% in the Leyland Trucks facility.

Hereafter an overview of core processes used at DAF:

Supply management

DAF's processes regarding its supplier base are largely driven by the following corporate objectives¹⁰: Components are bought unless in-house production provides DAF with a competitive advantage or is cheaper than sourcing from outside

Preferably suppliers can deliver globally to the PACCAR group,

1. DAF is looking for long-term relationships and integration with suppliers.
2. DAF is determined to achieve more with fewer suppliers in order to get better deals with scale,
3. Suppliers are involved at an early stage of a new development.

Within DAF's supply management processes and guidelines great emphasis is put on process improvement that should be achieved by co-operating with the suppliers

DAF's focus in the area of supply management is driven by a continuous effort to improve and standardize processes that are expected to result in cost savings or working capital reduction.

¹⁰ DAF, retrieved from <http://www.daf.com/EN/About-DAF/suppliers/Pages/Supply-management-vision.aspx>, retrieved on May 20, 2011

In general it can be observed that DAF is rigorously pursuing high levels of standardization (e.g. parts). The process is rule-driven by setting clear criteria that need to be fulfilled by suppliers in order to get on a preferred supplier list. One of DAF's guiding principles is to outsource everything unless it provides a competitive advantage. All these facts are pointing to a consistent application of operational excellence principles in supply management.

Operations / Manufacturing

Manufacturing and assembly at DAF is one of the key contributors to cost savings initiatives in the last years. Two components are the main drivers of the manufacturing strategy¹⁰:

1. Investment in the most modern manufacturing equipment
2. Consistent deployment of six sigma principles across the company and its suppliers

Sales & Services

Not only does DAF sell trucks but they offer a total transport solution with the objective for their customers to achieve maximization of earnings by kilometer. DAF will help their customers to choose the right vehicle, finance it, maintain it and keep it running all the time.

International Truck Services (ITS)

DAF was a pioneer in offering an international assistance service to truck drivers in the early 70's¹¹. Whenever DAF truck drivers are stranded somewhere in the world they can call one number and DAF will help them fix the problem as soon as they can. Lately they are taking this assistance to the next level also from an operating standpoint. They are including a Telematics data communication system in their trucks that enables the driver to send all information that is required to assist him/her with the problem electronically to a central call center in Eindhoven by pressing just a button. Exact location of the truck as well as the details of the vehicle are sent via email to the call center¹¹. This will help DAF in their efforts to streamline the services and at the same time will extend better services to their customers.

¹¹ DAF, retrieved from <http://www.daf.com/EN/Services/Pages/International-Truck-Service.aspx>, retrieved on May 20, 2011

Help customers reduce their operational costs

DAF offers customers a service that is targeted to help them reduce operational costs of their total fleet. Despite the fact that truck fleet costs have been reduced on average by 20 to 30 % throughout the industry DAF claims that on average operational fleet costs can still be reduced by looking at every cost item. They see most opportunities in repair & maintenance as well as fuel costs¹².

The rest of the services DAF offers are in the area of financing and repair/maintenance contracts. In these areas we did not observe any differences towards their competitors.

c. Information technology (integrated, low-cost transaction systems, mobile & remote technologies)

To improve operational excellence in the support processes, DAF Trucks has a total technology integration. R&D, design, sales, supply chain, manufacturing, finance and support are all linked together. To even improve this, they use smart tags in the supply chain to improve the total chain. They even use Voice Recognition Technology and others to streamline all the processes.

d. Management systems (command and control, compensation fixed to cost and quality)

The management systems are set up around the processes, and also around process improvement. This is also reflected in the rollout of the six sigma philosophy in the entire Paccar group. The structure is certainly one of order and structure; the planning is a "pull" type of planning, driven by the sales of trucks with every truck made to order. Research and development is centralized in Eindhoven (DAF's headquarters) and the 6-sigma philosophy is used to structure all projects in the standardized 6-sigma way within Paccar, and including the DAF subsidiary.

DAF is known for good quality at a fair price – it is not the most expensive, fancy or advanced truck in the market. Yet, one could argue that DAF's strategy also has some product leadership and/or customer intimacy characteristics. DAF received the "International Truck of the Year" award in 2007 for its XF105 series truck. "The XF105 continues DAF's reputation for building fine long haulage trucks," jury chairman Andy Salter explained in recognition of DAF's XF105. "This category of the market continues to represent one of Europe's biggest and most important truck sectors and for a truck to be successful in this arena it has to meet the challenging demands of both the driver and operator. In the XF105 DAF has addressed these two customer groups in impressive fashion."¹¹ By reading this jury statement, it doesn't read like recognition for product

¹² DAF, retrieved from <http://www.daf.com/EN/Targetgroups/Fleetmanagers-info/Pages/reducing-operational-costs.aspx>, retrieved on May 20, 2011

leadership per se, but it seems like DAF has very well understood and addressed the market needs of both concerned parties, namely the driver and the operator (owner) of the truck. This could be recognized as a “customer intimacy” strategy. On the other hand, the jury words of “*continues DAF’s reputation of building fine trucks...*” also points towards a “solid and reliable” strategy that is so typical for an operational excellence strategy.

e. Organization (centralized functions, high skills at the core of the organization)

The organisation structure also reflects in the management style that is disciplined within DAF and hierarchical. It is an organization of professionals. There is little room for experimentation or exceptions within the organisation. The main driver for success of the Six Sigma implementation was the involvement of 12,000 Paccar employees trained in Six Sigma combined with the implementation of 14,500 projects since its inception. DAF also involved their customers and suppliers in the Six Sigma introduction – 230 of the company’s suppliers and many of the company’s dealers and customers.⁶ DAF is focusing on the total value chain of partnership and is using total quality to develop the business processes.⁵

2. Conclusions of the business model

It can be concluded that DAF is to a large extent driven by an operational excellence business strategy. The products (trucks) are nevertheless recognized with “excellence” rewards, but this is more the end result of dedicated focus on their operational excellence model that has given DAF a solid and reliable reputation, combined with some hints of a customer intimacy strategy, i.e. by considering the needs of the drivers and the operators of the truck. Logically, the 6 sigma and continuous improvement processes in place at DAF are largely process driven (i.e. inward looking) but also do consider the customer needs and eventually improve customer satisfaction. **(EXTRA INPUT??)**

Appendix

1. The DAF Production System

The “DAF Production System” (DPS) is a complete system for continuous production process improvement, very much inspired by the Toyota Production System (TPS); Toyota is the textbook example of an operational excellence company and basically the inventor of lean manufacturing and kaizen¹³.

The DPS system is implemented throughout the organisation: truck assembly, plate components factory, engine factory, supply chain management and purchasing. This is a clear indicator of a continuous improvement spirit that is institutionalized within the DAF organisation.

The principles of the DAF Production System can be summarized in the “lean house” below, figure 2.

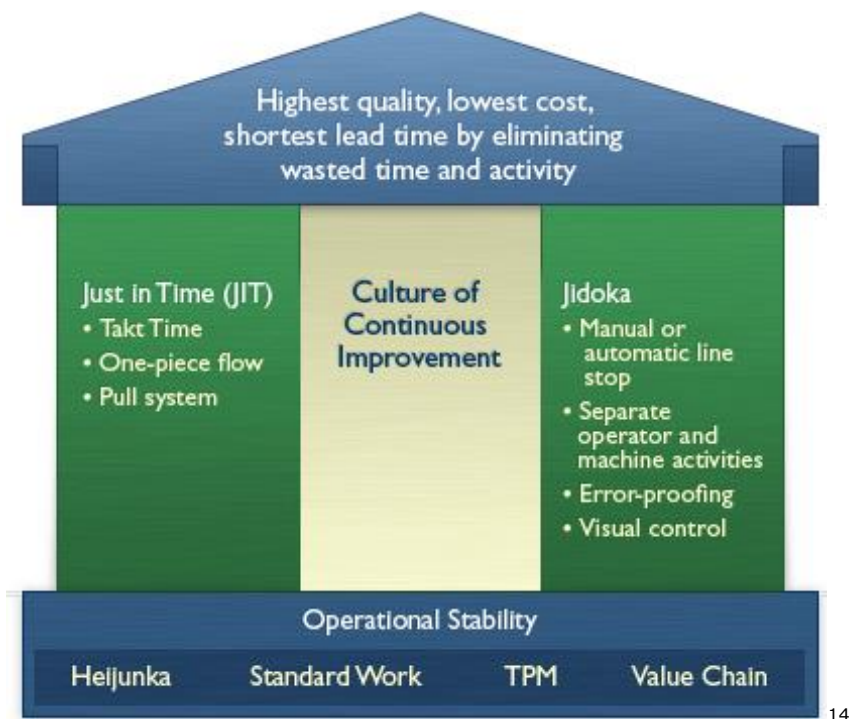


Figure 2: The “lean house” framework

Although it is a different system and methodology compared to six sigma, it is highly complementary to six sigma. This reflected in figure 3, illustrating the levels of quality consciousness in an organisation.

¹³ Kaizen stands for “continuous improvement” in Japanese

¹⁴ www.bakati.net/s~q-theToyotahouse.aspx



Figure 3: Six sigma framework

2. DAF coming strong in Europe¹⁶

In 2010, DAF Trucks N.V. -- a subsidiary of Paccar -- further strengthened its position on the European truck market.

In the heavy class +15 ton, equivalent of Class 8, a 15.2 percent market share was achieved in the European Union. In terms of volume DAF now takes a solid third place among the European truck manufacturers.

Only 10 years ago, DAF was the smallest of the then-seven European OEMs in the heavy segment in terms of volume. Now, with a market share of 15.2 percent, DAF has achieved a strong third position. In the Netherlands, Belgium, Great Britain, Czech Republic, Poland and Hungary, DAF is market leader. In Germany and Italy, DAF is the largest import make.

In almost all countries of the European Union, DAF realized growth in 2010. In the Netherlands (home market) the share in the heavy class increased from 33.3 to 34.7 percent and in Belgium it increased from 18.5 to 22.2 percent. In Germany, Europe's

¹⁵ Retrieved from www.1000advices.com/guru/processes_tps_lean_6sigma_hraeh.html

¹⁶ Retrieved from www.truckinginfo.com/news/news-detail.asp?news_id=73143 on May 21, 2011

largest truck market, market share rose from 10.6 percent to 11.1 percent, while market share in France and Spain increased to 14.6 percent and 14.4 percent respectively. And also in countries in Central and Eastern Europe, DAF further strengthened its position; in the Czech Republic, market share in the above 15-tonne class rose from 15.5 to 20.9 percent, while market share in Poland was 19.3 percent.

Last year in the 27 countries of the European Union (plus Norway and Switzerland), around 183,000 trucks were registered in the above 15-ton class. This represents an increase of more than 9 percent compared with 2009, when around 168,000 trucks were registered. DAF estimates that industry sales in 2011 of heavy trucks in Europe will end between 220,000 to 240,000 units.

3. Excerpt from a typical job offer at DAF¹⁷

Vacature omschrijving

Als Process Engineer ben je verantwoordelijk voor het continu verbeteren van de product- en proceskwaliteit volgens het DAF Production System, rekening houdend met alle facetten van World Class Manufacturing. Je zorgt voor een goede inrichting van de fabriek zodat het logistieke- en productieproces optimaal verlopen. Bij product- / procesproblemen ondersteun je het productieproces. Tevens bied je...

¹⁷ Retrieved from www.jellobee.com/vacature/indeed/cabb2fb23f51ebf3/ on May 21, 2011

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